

RESEARCH ARTICLE

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## The Impact of Organizational Entrepreneurship on Improving Competitive Advantage with Mediating Role of Innovation in Start-up Digital Industries

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### Abstract

The present study aimed to investigate the impact of organizational entrepreneurship on improving competitive advantage with the mediating role of innovation. The present study was applied in terms of aim, descriptive-survey in terms of data collection method, and quantitative in terms of type of data collected. The statistical population of the study included 75 executive managers of companies operating in the start-up digital industry. Using a convenience random sampling method and Cochran's formula, 63 people were considered as the sample size. Data were analyzed using Smart PLS software. The results obtained from path coefficients and significant coefficients showed that organizational entrepreneurship and competitive advantage have a significant and positive effect on the innovation of start-up digital industries. It was also concluded that organizational entrepreneurship has a positive and significant impact on competitive advantage. It was also found that competitive advantage could mediate the relationship between organizational entrepreneurship and innovation.

**Keywords:** Organizational entrepreneurship, competitive advantage, innovation, start-up digital industries

### Introduction

In today's competitive world, no one can deny the role of start-up digital industries in evolution and its impact on work and life. The rapid growth of information technology has changed organizations, increased market opportunities, improved performance, and

The digital industry offers a wide range of methods and tools. It is crucial for gaining a better understanding of how digitalization affects organizational development, learning, and change in learning environment. Digitalization not only affects the way individuals work, but also accelerates the evolution of organizations. One of the most

changed the way organizations work within organizations. Digitalization is concerned with the use of digital technologies to change business models and provide new revenue and value opportunities (Chernyak-Hai & Rabenu, 2018).

important characteristics of the digital industry is to achieve competitive advantage (Ben Arfi & Hikkerova, 2021). Competitive advantage refers to an organization's capability to succeed in the market. Competitive advantage is not only the result of the organization's entrepreneurial activities, but also the result of proper infrastructure, structural policy and

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competitive policy (Caseiro & Coelho, 2018). Competitive advantage is defined as the process that involves examining key competencies to understand that the competitive advantage created in the domestic market will expand. Domestic market conditions may create an advantage in international competition. Also, the nature of competition and the type of competitors in foreign markets are different and may affect its relationship with competitive advantage (Ramezanpoor et al., 2017).

Several factors are involved in improving competitive advantage in organizations. One of these factors received a lot of attention in the studied conducted in this regard is organizational entrepreneurship (Ben Arfi & Hikkerova, 2021). Most researchers view organizational entrepreneurship as a term that refers to entrepreneurial activities that receive organizational sanctions and resource commitments for the improvement purposes. In another definition, organizational entrepreneurship is described as formal or informal activities aimed at creating new jobs for established companies through product and process innovations and market developments (Tseng & Tseng, 2019). Organizational entrepreneurship can result in creation of capabilities and skills in the organization that can bring a competitive advantage to the organization by creating capabilities such as innovation, risk-taking, and being leading (Moradi Khanjamali, 2020).

The problem and the theoretical gap that exists and it was mentioned in the Mahmood and Arslan (2020) research is that the existing studies have not paid enough attention to creating and relating a general understanding of the relationship between organizational entrepreneurship and competitive advantage and mediating variables affecting it. Despite the emphasis on this area, especially the competitive advantage in the start-up digital industry, there are still ambiguities about how organizational entrepreneurship affects

competitive advantage, and these effects can be influenced by various mediating variables.

In this regard, Han and Park (2017) argue that if an organization has organizational entrepreneurship, innovation (i.e., the transformation of the existing organization, the birth of a new business organization and product innovation) will occur. Organizational entrepreneurship has become an important inspirational role for innovation. Organizations are responsible to their shareholders and have a responsibility to achieve their business and development goals. For this purpose, organizations must focus on aligning strategic approaches and process innovations, gaining economic value, and competitive advantage in the process. Paying attention to the issues and problems of the start-up digital industries, given their importance for the economic development of countries, can reduce the challenges and problems they face. Thus, considering the importance of this issue, the present study seeks to answer the question of whether organizational entrepreneurship has an effect on improving the competitive advantage of start-up digital industries with the mediating role of innovation.

## **A Review of the Theoretical Literature and Research Background**

### **Organizational Entrepreneurship**

Today, the world is realizing a big change, a change centered on evolving innovations and technologies that will have a profound impact on people's lives, the structure and thinking of organizations, and even the interactions of countries. Understanding this change and timely accompanying this change seems to be essential for all organizations of all sizes (Mirfallah Lialestani & Khamseh, 2021). Accordingly, with such changes Organizations that pursue organizational entrepreneurship are often viewed as dynamic and flexible characteristics that can take advantage of new business opportunities as they emerge (Ben

Arfi & Hikkerova, 2021). Organizational entrepreneurship and its components are crucial not only in production, but also in predicting innovation in companies. Employees who view management support, availability of time, authority, and resources positively for entrepreneurial activities are often involved in innovation (Ahmed et al., 2018). An organization's performance and effectiveness rely strongly on its organizational entrepreneurship capability. Organizational entrepreneurship is the process by which an individual or group of people in relation with an existing organization creates a new organization or stimulates innovation in that organization (Davari & Najmabadi, 2018; Hampel et al., 2020).

Organizational entrepreneurship is the process by which companies innovate, create new businesses, and change themselves by changing the scope of a business or key strategic processes. Organizational entrepreneurship is a company's risky behavior, its commitment to creating new products and services, and its willingness to strategically redefine its mission (Boone et al., 2019). According to Kuratko and Morris (2018), organizational entrepreneurship can be manifested in companies through corporate investment or strategic entrepreneurship. Corporate investment is related to launching new investments and this can be further divided into two categories. The first is the innovative investments that are created within the company, called domestic investments. The second activity is any innovation that occurs outside the company and is called foreign corporate investments. Foreign investment includes new businesses that are created by parties outside the company and subsequently invested or purchased in the company. Strategic entrepreneurship approaches also refer to a wide range of important entrepreneurial activities or innovations adopted to achieve the company's competitive advantage. They do not usually

result in new businesses for the company. With strategic entrepreneurship, innovation can be found in any of the five areas of corporate strategy, product offers, service markets, internal organization (i.e., structure, processes, and capabilities), or business model (Kuratko & Morris, 2018).

### **Competitive Advantage**

The strategic management literature shows that managers formulate the strategies of the organization after considering the environmental trends. Therefore, the key point is how managers perceive and interpret competitive forces. Market conditions shape the nature and intensity of competition and affect industry dynamics (Anvaripour et al., 2022). The Company's competitive advantage is a determining factor of the company's success in using its resources to meet customer needs compared to competitors. Creating a competitive advantage requires determining the factors that put a firm in a better position than competitors. It is claimed that a firm has a competitive advantage when it has resources and capabilities that are firstly unique and secondly difficult to imitate, and also that firm can offer products to the market that are of great value to the customer compared to competitors (Basaghzadeh et al., 2020). Porter (1985) designed the first model of competitive advantage. It became a framework for strategic thinking about how to outperform competitors in the market.

According to Porter's point of view, competitive advantage is defined as the value that a company has created for its customers by offering equal benefits or more advanced products or services compared to competitors. They include access to natural or low-energy resources, highly skilled labor, geographical location, high barriers to entry, and access to new technology. Good and high-performance products can create a competitive advantage for the company, even if they are more expensive than competitors' products.

Competitive advantage enables an organization to differentiate the quality of its products or services, albeit at a low cost, to create superior value for its customers and provide them with better services than the products and services of its competitors (Khorsheed et al., 2020).

Competitive advantage is known as the value that an organization offers to its customers in a way that this value is not offered by potential and actual competitors at that point of time. Competitive advantage is a situation that enables a firm to offer a high-quality product with higher efficiency and using superior methods, and to provide more profit for the firm in competition with competitors. An economic unit has a competitive advantage when it can continuously produce its products at a lower cost and higher quality than its competitors for specific reasons that arise from the characteristics of that unit (such as spatial location, technology, personnel, etc.) (Roodsaz et al., 2012). Researchers believe that implementing a value-creating strategy that is not simultaneously implemented by any other organization in the same market has a competitive advantage. In other words, a company must implement a strategy that increases the performance of its organization, which gives the company a competitive advantage over the current or potential company that enters the market. To achieve competitive advantage, most organizations develop a business strategy that allows them to manipulate the various resources that they control and that the company knows that it can create a competitive advantage (Hamadamin & Atan, 2019).

### **Innovation**

In recent decades, innovation has been the subject of extensive studies. It has attracted much research attention. Researchers in various studies have investigated innovation in relation to organizational structure, strategic

management and economic welfare. Researchers have stated that innovation can be a new product or service, an administrative system, or a new plan or program that is relevant to the members of the organization (Ben Arfi & Hikkerova, 2021). Innovation in the organization is crucial to ensure its long-term survival, especially for the manufacturing sector. To cope with a rapidly changing and highly competitive business environment, it is important for organizations to take innovative and creative approaches to organizational success (Udriyah et al., 2019). The concepts of innovation are mainly developed in two directions, including social changes and economic development. The social view focuses on cultural issues, social interactions and decision-making. From now on, the characteristics of companies become important that influence them in deciding to adopt new knowledge or technology. The second orientation is related to industrial and organizational competitiveness. In this dimension, innovation meets the needs of the market and economic development (Farsi et al., 2013). Innovation refers to the process of changing some things created by introducing something new and giving value to consumers and contributing to the growth of organizations in terms of financial performance, knowledge, human experience, efficiency and quality of the organization.

Innovation focuses on product innovation, process innovation and service innovation. Product innovation is the creation of desirable changes in physical products, innovation is the process of creating desirable changes in the production process of products and services, and service innovation is the creation of desirable changes in the services used by consumers (Jingnan & Yunus, 2018). Donkor et al. (2018) define innovation as the development and implementation of new ideas by individuals who are involved in transactions with others within an institutional order over time. Moreover, innovation is a

specific function of entrepreneurship. It is the tool through which the entrepreneur either generates new wealth-generating resources or provides existing resources with increased potential for wealth creation (Donkor et al., 2018). Researchers state that there are five types of innovation: (1) the introduction of a new product or a qualitative change in an existing product; (2) process innovations for a new industry; (3) opening a new market; (4) development of new sources of supply of raw materials or other inputs and (5) changes in the industrial organization (Ben Arfi & Hikkerova, 2021).

### Research Background

Several studies have examined the present issue, some of which are mentioned below. In a study entitled “Organizational entrepreneurship, production innovation and knowledge transformation with the role of digital platforms”, Ben Arfi & Hikkerova (2021) concluded that organizational entrepreneurship is recognized as an important and effective factor in improving productive innovation and knowledge transformation. In a study entitled “Investigating the relationship between organizational entrepreneurship and innovation among startup companies”, Hampel et al. (2020) concluded that organizational entrepreneurship can play a crucial role in improving innovation and lead to the expansion of innovative activities in the organization. Boone et al. (2019) investigated the diversity of senior management team, organizational entrepreneurship and innovation among multinational companies and concluded that organizational entrepreneurship plays a major role in improving innovation due to their importance among companies. Tseng and Tseng (2019) investigated organizational entrepreneurship as a strategic approach to innovative performance and concluded that six innovative outcomes including entrepreneurial investments, helping people with innovative

thinking, rewarding an organizational entrepreneur, having a broad view of the organization and staff training on organizational entrepreneurship encourage people to engage in innovative behaviors.

Udriyah et al. (2019) also investigated the effect of market orientation and innovation on creating a competitive advantage among the tile industry in Malaysia and concluded that innovation is recognized as a major factor in creating a competitive advantage. In a study entitled "Fostering innovation through organizational entrepreneurship through employee involvement", Ahmed et al. (2018) concluded that organizational entrepreneurship with the characteristics of management support, reward, authority, availability of time and organizational boundaries leads to innovation in the organization. Jingnan and Yunus (2018) investigated the relationship between organizational entrepreneurship and innovation among manufacturing companies in Malaysia and concluded that there is a significant relationship between organizational entrepreneurship and innovation among manufacturing companies. With regard to domestic studies, Moradi Khanjamali (2020) examined the relationship between organizational entrepreneurship and competitive advantage and performance of employees of sports and youth departments in Lorestan province and concluded that there is a significant relationship between the level of organizational entrepreneurship and organizational performance and competitive advantage in employees of sports and youth departments in Lorestan province. Bahrami et al. (2022), in the research they have conducted, concluded that innovation can create a sustainable competitive advantage for the food industry, which leads to the success of the organization.

In a study, Abdol Maleki (2020) investigated the acquisition of sustainable competitive advantage in the market and the

achievement of organizational innovation through strategic knowledge management in the digital age. He concluded that the direction of innovation and knowledge management in the organization can guarantee the survival of the organization and also create a sustainable competitive advantage for organizations. Finally, Rastegar et al. (2015) investigated the effect of promoting organizational entrepreneurship on competitive advantage with the mediating role of organizational transparency among Kaleh and Khazar Electric Company employees. They concluded that paying attention to organizational entrepreneurship is a necessity to achieve competitive advantage in today's companies, in which all resources and facilities are changing. Thus, given what was stated above,

the following hypotheses and conceptual model (Figure 1) are proposed for the present study:

- Organizational entrepreneurship has a significant impact on improving the competitive advantage of start-up digital industries.
- Organizational entrepreneurship has a significant impact on the innovation of start-up digital industries.
- Innovation has a significant impact on improving the competitive advantage of start-up digital industries.
- Organizational entrepreneurship has an indirect effect on improving the competitive advantage of start-up digital industries through the mediating variable of innovation.

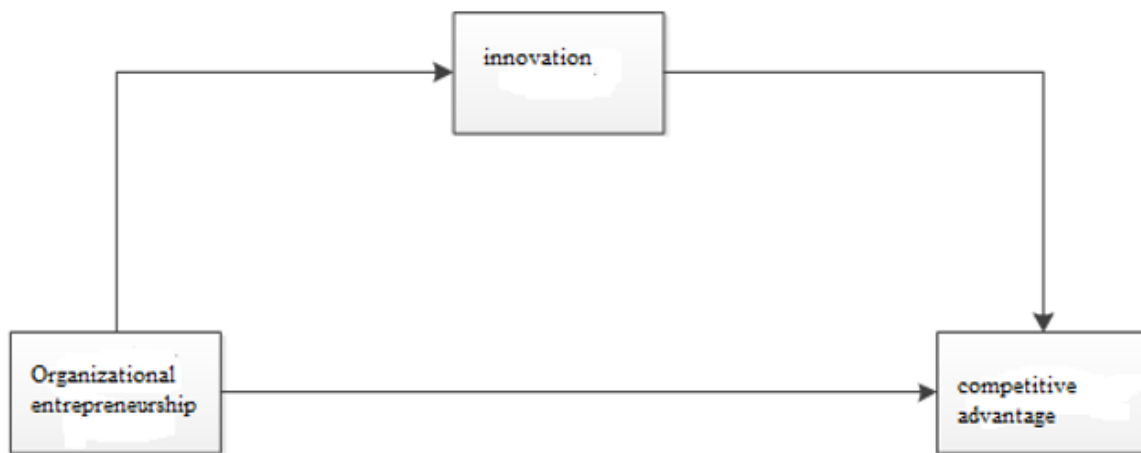


Figure 1. *Conceptual model of research*

## Methods

The present research is applied in terms of aim, descriptive-survey in terms of data collection and quantitative in terms of type of data collected. The statistical population includes 75 executive managers of companies operating in the start-up digital industry. Using a convenience random sampling method and Cochran's formula, 63 people were considered as the sample size. Structural equation modeling was used to examine the conceptual model and research hypotheses. Using this method, the accuracy of observed variables

can be measured and the causal relationships between the latent variables and the level of the explained variance can be investigated. In the present study, organizational entrepreneurship, innovation and competitive advantage are the three main latent variables and the questions of each are the observed variables.

Standard questionnaires were used to collect data. To measure organizational entrepreneurship, Han and Park questionnaire (2017), which includes 12 questions, was used. To measure innovation, Han & Park

Questionnaire (2017), which includes 9 questions, was used. To measure competitive advantage, Caseiro and Coelho questionnaire (2018), which includes 6 questions, was used. Table 1 describes the research tool.

To measure reliability, using the data obtained from the questionnaires and with the help of Smart PLS statistical software, the reliability was measured by measuring the

Cronbach's alpha value and composite reliability. A value higher than 0.7 indicates acceptable reliability for these two criteria (Farsi et al., 2013). In the present study, the results related to these two criteria are presented in Table 1. As shown, all values are higher than 0.7, indicating the appropriate reliability of the research questionnaire.

Table 1.

*Research tools and reliability results*

Variable	Number of items	Alpha coefficients	Composite coefficients
Organizational entrepreneurship (Han & Park, 2017)	12	0.83	0.86
Innovation (Han & Park, 2017)	9	0.89	0.91
Competitive Advantage (Caseiro & Coelho, 2018)	6	0.81	0.84

The validity of the questionnaire was assessed by two convergent and divergent validity criteria in PLS software. In the convergent validity section, the AVE criterion (average variance extracted) was used and the results of this criterion for the research variables are shown in Table 2. The criterion value for the AVE acceptance level is 0.5 (Hulland, 1999). As shown in Table 2, all AVE values related to structures were greater than 0.5, indicating the acceptable convergent validity of the present research questionnaire.

In the divergent validity section, the comparison of the squared AVE of the dimensions of the main variables with the values of the correlation coefficients was examined. The original diameter values of this table are the squared AVE coefficients and the lower and upper values of the original diameters are the correlation coefficients between each dimension and the other dimensions. Results of convergent validity and divergent validity presented in Table 2.

Table 2.

*Results of convergent validity and divergent validity*

Variables	Organizational entrepreneurship	Innovation	Competitive Advantage
Convergent validity	0.573	0.647	0.622
Organizational entrepreneurship	0.756		
Innovation	0.458	0.804	
Competitive Advantage	0.540	0.599	0.788

As shown in the above matrix, the squared AVE of each dimension (values of the original diameter) is greater than the correlation coefficients of that dimension with other dimensions, which indicates that the divergent validity of the structures is acceptable.

## Results

In this step, the cause-and-effect relationship between organizational entrepreneurship and competitive advantage with the mediating role of innovation is measured in the structural model section. As shown in Figures 2 and 3 and Table 3, the

effect of organizational entrepreneurship on competitive advantage with a significance coefficient t value of 9.91 and a path coefficient value of 0.64 is significant and positive (confirmation of the first hypothesis). Also, the effect of organizational entrepreneurship on innovation has become significant and positive with a significance coefficient t value of 7.44 and a path

coefficient value of 0.53 (confirmation of the second hypothesis). Also, the effect of innovation on competitive advantage with a significance coefficient t value of 12.46 and a path coefficient value of 0.71 has become significant and positive (confirmation of the third hypothesis). The mediating role is also shown in Table 3.

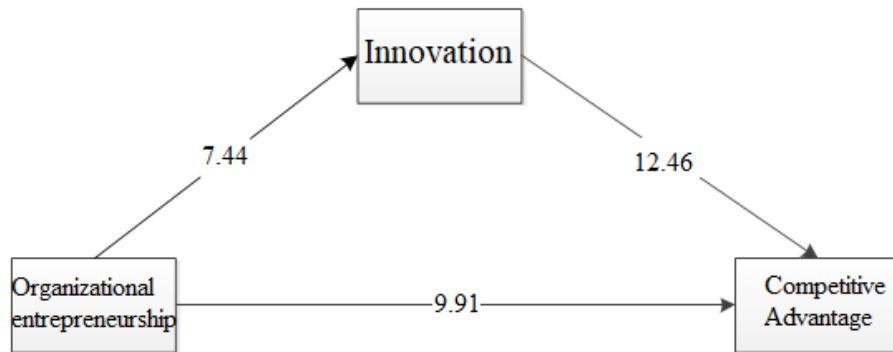


Figure 2. Testing research hypotheses using significance coefficients

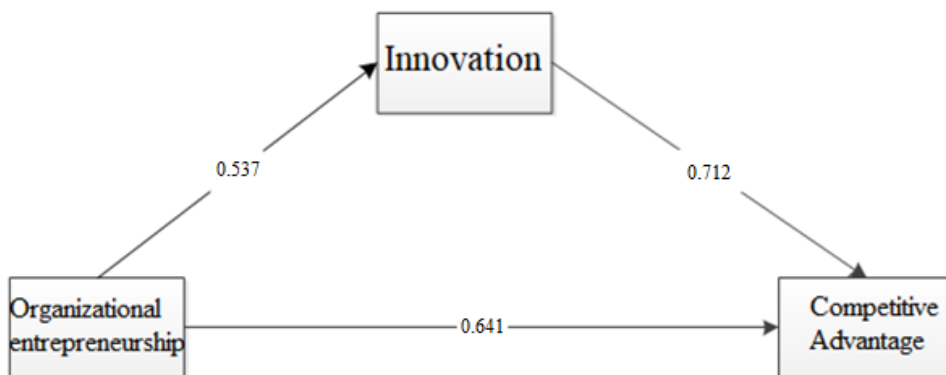


Figure 3. Testing research hypotheses using path coefficients

The output of PLS Smart software confirms the research hypotheses, which are shown in

the table below. Since all values of t are above 1.96, all hypotheses are confirmed.

Table 3. Results of testing research hypotheses

Hypotheses	Path coefficients	statistic t value	Result
Organizational Entrepreneurship ← Competitive Advantage	0.64	9.91	confirmed
Organizational Entrepreneurship ← innovation	0.53	7.44	confirmed
innovation ← Competitive Advantage	0.71	12.46	confirmed
Organizational Entrepreneurship ← innovation ← Competitive Advantage	0.53*0.71=0.37		confirmed



Finally, after testing the hypotheses, the fit conceptual model of the research was examined. The GOF index is an index for examining model fit to predict endogenous variables. Three values of 0.01, 0.25 and 0.36 have been introduced as weak, moderate and strong values, respectively, for GOF (Farsi et al., 2013).

Table 4.

*Fit the conceptual model of research*

Dimensions	<b>Communalities</b>	R <sup>2</sup>
Organizational entrepreneurship	0.573	-
Innovation	0.647	0.288
Competitive Advantage	0.622	0.458
Mean	0.614	0.373

$$Gof = \sqrt{\overline{communalities} \times \overline{R^2}} \\ = \sqrt{0.614 * 0.373} = 0.478$$

The result shows that the calculated GOF is greater than 0.36, indicating a good fit of the conceptual model of the research.

### Discussion and Conclusion

In the present study, using a descriptive-survey method, the impact of organizational entrepreneurship on improving competitive advantage with the mediating role of innovation in start-up digital industries was examined. The results of the first hypothesis of the research with a significance coefficient value of 9.91 and a path coefficient of 0.64 showed that organizational entrepreneurship has a positive and significant impact on improving the competitive advantage of start-up digital industries. As mentioned, organizational entrepreneurship is the key to the company's survival and achieving a higher competitive advantage, especially in the start-up digital industry. Organizational entrepreneurship is defined as a strategic tool reflects the use of innovation, leadership and growth in organizations to differentiate and compete with competitors. In this regard, the results of studies conducted by Moradi

Khanjamali (2016) and Rastegar et al. (2016) showed that attention to organizational entrepreneurship is recognized as a necessity to achieve competitive advantage, confirming the results of the present hypothesis.

The results of the second hypothesis of the study with a significance coefficient value of 7.44 and a path coefficient value of 0.53 showed that organizational entrepreneurship has a positive and significant effect on the innovation of start-up digital industries. As mentioned, organizational entrepreneurship is defined as a strategic tool reflects the use of innovation in organizations. Organizational entrepreneurship can increase innovation in the organization and promote innovative behaviors by applying the entrepreneurial spirit and fostering ideas. In this regard, the results of studies conducted by Ben Arfi and Hikkerova (2021), Hampel et al. (2020), and Boone et al. (2019), which concluded that organizational entrepreneurship has an impact on fostering innovation in the organization, confirm the results of the this hypothesis.

The results obtained from the third hypothesis of the study with a significance coefficient value of 12.46 and a path coefficient value of 0.71 showed that innovation has a positive and significant impact on improving the competitive advantage of start-up digital industries. As mentioned, innovation in today's age is recognized as a factor resulting in creation of a competitive advantage for companies. Innovation refers to the process of change created by introducing something new, adding value to consumers, and contributing to the growth of organizations and the quality of the organization. In this regard, the results of studies conducted by Udriyah et al. (2019) and Abdol Maleki (2020), which concluded direction of innovation in the organization can guarantee the survival of the organization and also create a sustainable competitive advantage for organizations, confirm the results of this hypothesis. Confirmation of the

fourth hypothesis of the study also indicates that organizational entrepreneurship has an indirect impact on improving competitive advantage through the mediator variable of innovation. Paying attention to organizational entrepreneurship and its related components in organizations can equip them with capabilities and competencies to foster innovation in the organization to create a higher competitive advantage.

Finally, based on the obtained results, it is recommended that an atmosphere and culture to be created so that employees can eagerly participate in identifying the needs of customers and present new ideas based to improve organizational entrepreneurship. It is recommended to provide a collaborative space for idea generation and teamwork so that employees can perform their duties and ideas without fear or worry. To increase organizational innovation, it is also recommended to involve employees in work and problem-solving activities and delegate authority to them to make decisions on issues, so that they have sense of belonging to company and show more innovation and creativity. Managers are also recommended to change the elements of their business model and implement innovations to achieve a competitive advantage to meet customers' needs. Finally, it is recommended that start-up digital industry managers use new methods in distribution and introduction of products to differentiate themselves from competitors.

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